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Case Report

Left Paraduodenal Hernia: An Uncommon Cause of Acute Abdomen☆

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SUMMARY

A 66-year-old woman visited the emergency department because of sudden onset of nausea, vomiting, and left hemi-abdominal pain that progressed to the upper hemi-abdomen 2 hours prior to her visit. A physical examination performed on admission revealed gradually exacerbating abdominal pain. Radiologic studies revealed a sac-like dilatation of the proximal jejunum with bezoar impaction in the left paraduodenal fossa. Emergent laparotomy was performed under the impression of left paraduodenal hernia, and an incarcerated jejunum with perforation was found in the left paraduodenal fossa. Paraduodenal hernia is a relatively rare cause of acute abdomen, and its diagnosis is often incorrect or delayed owing to its variable clinical manifestations. Therefore, it is important for clinicians to recognize this condition, diagnose it early, and avoid its misdiagnosis, owing to its high overall mortality rate.

1. Introduction

Internal hernia is a rare and potentially life-threatening condition that can cause intestinal obstruction, with an incidence of 0.2–0.9% among all cases of bowel obstruction[1]. Approximately 53% of reported cases of internal hernia are paraduodenal, comprising left (40%) and right (13%) paraduodenal hernias[2]. Internal hernia may cause acute intestinal obstruction, chronic digestive disorders, and nonspecific or mild symptoms such as nausea and vomiting[3]. Because of its highly variable symptoms and signs, preoperative diagnosis of internal hernia is not always possible[4]. We describe a cause of intestinal obstruction that is potentially fatal in the case of misdiagnosis or delayed diagnosis.

2. Case report

A 66-year-old woman presented with a sudden onset of left hemi-abdominal pain that progressed to the upper hemi-abdomen, accompanied by nausea and vomiting for 2 hours prior to her visit to the emergency department. Her medical history included diabetes mellitus, essential hypertension, and hyperlipidemia controlled by medication. Her vital signs were as follows: temperature, 35.6 °C; pulse rate, 65 beats/min; respiratory rate, 19 breaths/min; and blood pressure, 190/83 mmHg. An abdominal examination revealed a tender abdomen; tenderness was more severe over the left aspect and left upper quadrant of the abdomen with no overt peritoneal signs initially. The results of the blood tests showed an elevated aspartate aminotransferase level, 72 mg/dL (reference range, 15–41 mg/dL). Other laboratory tests revealed normal hemoglobin level, hematocrit reading, white blood cell count, platelet count, urea level, creatinine level, electrolytes level, and blood glucose level. An anteroposterior abdominal radiograph showed a clustered dilated small bowel loop with bezoar impaction in the left abdomen (Fig. 1, arrowheads), which caused a mass effect on the greater curvature of the stomach (Fig. 1, arrow). Computed tomography (CT) of the abdomen revealed an encapsulated cluster of dilated jejunal loops (Fig. 2, arrowheads) in the left paraduodenal fossa. It also showed that the inferior mesenteric vein was positioned in the neck of the hernial sac (Fig. 2, arrow), with anterior and upward displacement caused by the clustered dilated bowel loops.

The symptoms were gradually exacerbated after admission. A second physical examination of the abdomen revealed apparent rebound tenderness and mild muscle guarding. Emergent laparotomy was performed under the impression she had an incarcerated left paraduodenal hernia. The incarcerated jejunum was herniated through a 5 cm defect in the small bowel mesentery with a small perforation hole in the herniated jejunal loops. We reduced the herniated bowel loops without any difficulty and resected the perforated segment (approximately 5 cm long) and

☆ All contributing authors declare no conflict of interest.

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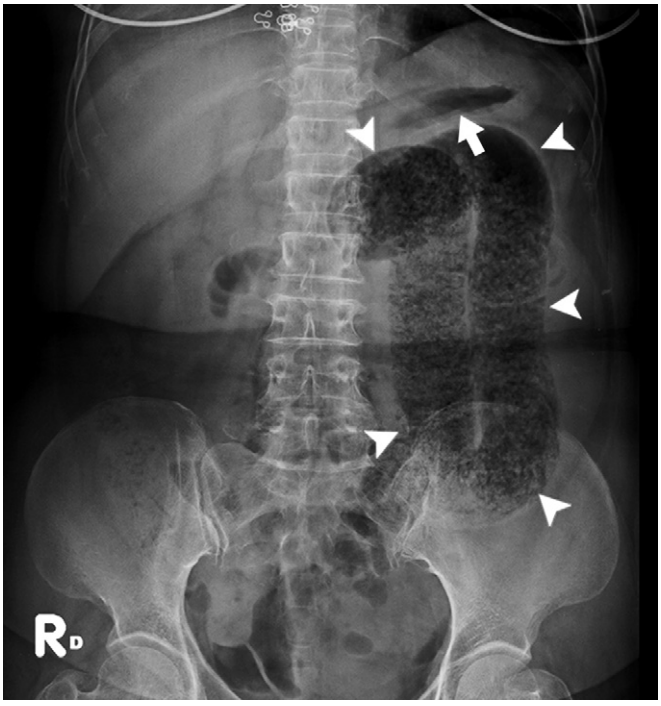

Fig. 1. Anteroposterior plain abdominal radiograph shows dilated saclike small bowel loops (arrows) in the left abdomen, with a mass effect that displaced the greater curvature of the stomach (arrowheads).

performed an end-to-side anastomosis for the intestine. The entire jejunum was viable, and the hernial orifice of the mesenteric defect was closed with interrupted silk. The postoperative course was uneventful, and the patient was discharged on postoperative day 13.

3. Discussion

Internal hernia is rare condition with an incidence of <1% of all cases of bowel obstruction and up to 5.8% of all cases of small bowel obstruction[1,5,6]. Paraduodenal hernia constitutes 53% of all cases of internal hernias, of which 40% and 13% are of left and right paraduodenal hernias, respectively[2,4]. This condition involves the protrusion of a viscus through a peritoneal or mesenteric opening[5]. A left paraduodenal hernia occurs when the bowel prolapses through the Landzert fossa[7]. The overall male/female sex ratio for internal hernia is approximately three[8]. The overall mortality rate is 20%, and the mortality rate is up to 50% and 100% in the case of treated and untreated strangulated bowel or ischemic bowel, respectively[2,5,6,9]. The symptoms and signs of internal hernia range from minor to severe and may include nausea, vomiting, nonspecific abdominal pain, bowel obstruction, and peritonitis[3,6]. Because of the highly variable locations and symptoms of internal hernia, this condition can be misdiagnosed or underdiagnosed. However, careful physical examination, sonography, plain radiography, and CT can help in the differential diagnosis of obscure internal hernia[10].

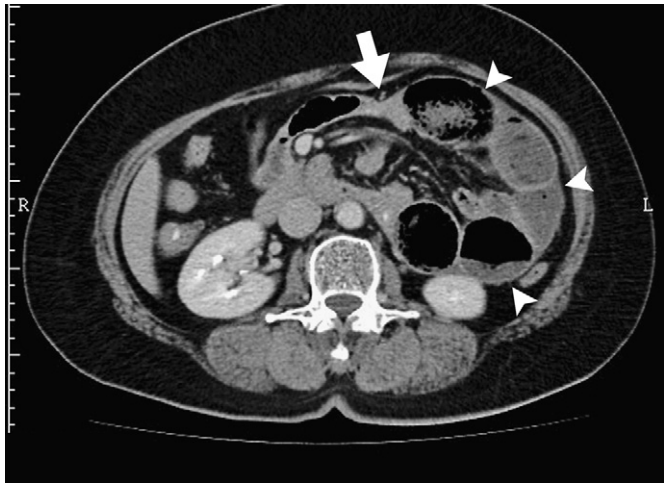

Fig. 2. Axial contrast-enhanced computed tomograqphy image shows a saclike dilated jejunum (arrows) prolapsing through the left paraduodenal fossa, with the inferior mesenteric vein (arrowheads) in the neck of the hernial sac displaced anteriorly by the hernial bowel loops.

In the case of internal hernia, plain radiography is the first-line diagnostic imaging tool that can reveal the presence of a dilated intestinal loop over a herniated bowel segment with or without mass effect of other abdominal organs[11]. In recent times, abdominal CT is increasingly performed for the evaluation of suspected internal hernia because of the availability of detailed anatomical topography of various structures. In typical CT images, left paraduodenal hernia shows a cluster of dilated bowel segments with engorged and displaced mesenteric vessels at the hernial orifice[12]. Barium-enhanced studies such as upper gastrointestinal series, abdominal ultrasonography, and angiography are other diagnostic imaging modalities that can be utilized. Of these, barium-enhanced upper gastrointestinal series and CT are more useful for assessing internal hernia[12].

Exploratory laparoscopy plays an important role in resolving an uncertain diagnosis, with an accuracy of >90%; accuracy is 77% for CT[10,13]. The overall mortality rate may exceed 50% in cases of strangulated or ischemic bowel, even after appropriate and emergent surgery. All paraduodenal hernias should be repaired, including those that are asymptomatic.[13]

4. Conclusion

Paraduodenal hernia has various nonspecific symptoms and a high mortality rate, and therefore physicians should consider this condition during differential diagnosis. Although this condition is extremely rare, it is important for a medical practitioner to recognize it in order to prevent a delay in the administration of appropriate treatment.

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